REMARKS

This paper is being provided in response to the Office Action dated April 27, 2006, for the above-referenced application. In this response, Applicant has amended claims 63 and 80 to clarify that which Applicant considers to be the claimed invention. Applicant respectfully submits that the amendments to the claims are fully supported by the originally-filed specification.

The rejection of claims 63, 66-80 and 83-96 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,324,654 to Wahl et al. (hereinafter "Wahl") in view of U.S. Patent No. 5,920,817 to Umeda et al. (hereinafter "Umeda") is hereby traversed and reconsideration thereof is respectfully requested in view of the amendments to the claims contained herein.

Independent claim 63, as amended herein, recites a method for performing data recovery in a computer system that includes sending data from a first storage device to at least one other secondary storage device, the data being sent in a plurality of data packets, each of the plurality of packets being associated with a sequence number having a first predetermined value, upon determining that the data has been successfully stored on all of the at least one other storage device, deleting journal entries in a sender corresponding to the data and, upon determining a failure in connection with synchronizing data between a first storage device and at least one other secondary storage device, deleting journal entries in each of the at least one other secondary storage device, and resending unsynchronized journal entries from the sender by sending a plurality of data packets all having a same sequence number lower than sequence

numbers associated with other unsent packets and then sending any remaining data packets having a next higher sequence number, where data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created and wherein data packets having the same sequence number represent different data that is independently generated from a plurality of different sources. Claims 66-79 depend, directly or indirectly, from independent claim 63.

Independent claim 80, as amended herein, recites a computer program product for performing data recovery in a computer system that includes machine executable code that sends data from a first storage device to at least one other secondary storage device, the data being sent in a plurality of data packets, each of the plurality of packets being associated with a sequence number having a first predetermined value, machine executable code that, upon determining that the data has been successfully stored on all of the at least one other storage device, deletes journal entries in a sender corresponding to the data, and machine executable code that, upon determining a failure in connection with synchronizing data between a first storage device and at least one other secondary storage device, deletes journal entries in each of the at least one other secondary storage device, and resends unsynchronized journal entries from the sender by sending a plurality of data packets all having a same sequence number lower than sequence numbers associated with other unsent packets and then sending any remaining data packets having a next higher sequence number, where data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created and wherein data packets having the same sequence number represent different data that is independently generated from a plurality of different sources. Claims 83-96 depend, directly or indirectly, from

claim 80.

The Wahl reference discloses a computer network remote data mirroring system that writes update data both to a local data device (16) and to a local, chronologically sequenced journal storage area (18). If the local computer system crashes, upon recovery or re-boot of the local computer system, the two most current updates from the journal storage area (18) device are written to the local data device (16) to assure that the data stored on the local data device is current. Figure 2 shows that the journal storage area (18) may be organized as a circular queue. Column 7, lines 18-22 disclose that each entry written to the journal storage area (18) consists of data and a header where the header contains information, such as a timestamp, sequence number, device offset, and size of the transaction that is used by other system components. Column 9, lines 32-37 of Wahl disclose that the header contains, *inter alia*, a global sequence number (unique between all journal devices) and a local sequence number (unique within a current journal device) and that the sequence numbers are used to ensure that the order of the data entries in the journal storage area (18) exactly follows the sequence in which they are generated. As indicated in the Office Action, Wahl does not teach sending a plurality of data packets all having a same sequence number lower than sequence numbers associated with other unsent packets and then sending any remaining data packets having a next higher sequence number, wherein data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created and wherein data packets having the same sequence number represent different data.

The Umeda reference discloses a mobile communication system with a handover scheme. The Office Action cites to Umeda as disclosing packets having identical sequence numbers that are suggested as being lower than a successive unsent packet because of an increasing sequence number incrementing process (see col. 13, lines 61-66 of Umeda). The Office Action suggests that the packets of Umeda are stored in a buffer and sent in an order independent of the order in which they were created because the packet is output according to its corresponding reliability information, which the Office Action suggests as being "different data" of each packet (see col. 16, lines 1-7 of Umeda).

The presently-claimed invention includes features wherein a plurality of data packets having a same sequence number are sent in an order that is independent of an order in which the data packets were created and wherein data packets having the same sequence number represent different data generated by a plurality of different sources. This feature is described in the present application and illustrated, for example, by Figures 8 and 9 and the corresponding description on pages 20-22 of the originally-filed specification. Data packets from two independent chains may be assigned the same sequence number and written to the secondary storage device in any order. Thus, for recovery operations (e.g., the step 306 of Figure 16), the data corresponding to the same sequence number may be provided in an order that is independent of an order in which the data packets were created, as recited in Applicant's independent claims. The data packets represent different data from different sources, not the same data retransmitted (see, for example, page 20, lines 3-13 of the originally-filed specification).

Applicant respectfully submits that neither Wahl nor Umeda, alone or in any combination, disclose the above-noted features as claimed by Applicant. As noted above, the Office Action states that Wahl does not disclose the specified features and then cites to Umeda as disclosing these features. However, in contrast to Applicant's presently claimed invention, Umeda discloses a system wherein reliability information corresponding to each packet is attached to each packet (see col. 16, lines 1-7 and FIGS. 10D and 10E of Umeda). When a plurality of packets have an identical number sequence are stored, a packet selection and composition circuit 134 selectively outputs the packet with the highest reliability among the plurality of packets according to the reliability information attached to each packet. Consequently, under Umeda's system, the "different data" identified by the Office Action is simply the addition of reliability information to each data packet having an identical number sequence, as seen in the comparison of FIGS. 10D and 10E. Except for the reliability information, the data is the same and, even with the reliability information, data having the same sequence number is from the same source. Umeda does not disclose data having the same sequence number being generated from a plurality of different sources as presently claimed by Applicant.

Accordingly, Applicants submit that neither Wahl nor Umeda, taken alone or in combination, teach or fairly suggest at least the features that data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created and wherein data packets having the same sequence number represent different data that is independently generated from a plurality of different sources. In view of the above, Applicant respectfully requests that this rejection be withdrawn.

Based on the above, applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
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Date: July 25, 2006

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